



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,397	03/28/2001	Chiyoko Komatsu	FUJS 18.509	3810

26304 7590 01/11/2006

KATTEN MUCHIN ROSENMAN LLP
575 MADISON AVENUE
NEW YORK, NY 10022-2585

EXAMINER

LEVITAN, DMITRY

ART UNIT	PAPER NUMBER
----------	--------------

2662

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,397

Applicant(s)

KOMATSU ET AL.

Examiner

Dmitry Levitan

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2662

Amendment, filed 11/29/05, has been entered.

Claim Rejections - 35 USC § 103

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 6,256,235).

1. Regarding claims 1, 3, 4, 13, Lee substantially teaches the limitations of claim 1.

A communication node (memory device or any device comprising modules, where the signals between its modules depend on the modules location on the bus Fig. 1 and 2:41-57) comprising:

A backplane transmission circuit (programmable slew rate and amplitude driver circuit on Fig. 6, comprising programmable pre-emphasis 4:26-31) transmitting signals between a controller and communication units installed in plurality of slots (residing at different locations 3:7-23); and

A signal waveform control unit (program register 51, lock circuit 53 and program delay 55 A-C on Fig. 8 and 6:3-14) interfacing with said backplane transmission circuit (sharing interface TRI_A, as shown on Fig. 6 and 8) and controlling the signal waveform (amplitude and slew of DATA OUT signal 5:17-65) on the basis of installed slot position information of said communication units in said backplane (interrogating the modules to determine which slots are populated and set an appropriate waveform 7:54-67, inherently based on the installed slot position information, because the distance/delay from the controller to the populated slots 8:1-6 is used for determining the signal waveform).

Lee does not teach communicating between the units installed in a plurality of slots.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Lee by adding communication between the units installed in the slots to improve the system flexibility, by adding data interchange between the modules.

Art Unit: 2662

2. Regarding claim 2, Lee teaches signal waveform control unit including:

An installing slot position information collecting section for collecting slot position information (Lee teaches that controller interrogates modules 13 regarding their position 7:54-60, therefore the controller inherently includes a section that performs the collection function);

A waveform correction information generating section for generating the correction corresponding to a distance of the signal to a particular slot (inherently part of the controller 11, because Lee teaches the controller setting an appropriate waveform for itself 7:60-62).

3. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee.

Lee substantially teaches the limitations of the parent claim 1.

Lee does not teach using an error correction circuit to correct errors in the signal.

Official notice is taken that using an error correction circuit to correct errors in the signal is well known and expected to ensure the error free transmission.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an error correction circuit to correct errors in the signal to the system of Lee to reduce the amount of errors in the system operating in noisy environment.

Regarding claim 11, implementing an error correction in the signal includes adding error correction information on the transmitting side and error correction circuit on the receive side.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee.

Lee substantially teaches the limitations of parent claim 1.

Lee does not teach using an extension connection section for additional units in a slot and wiring for communicating the extension units with the existing units.

Art Unit: 2662

Official notice is taken that using an extension connection section for additional units in a slot and wiring for communicating the extension units with the existing units is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using an extension connection section for additional units in a slot and wiring for communicating the extension units with the existing units to the system of Lee to improve the system capacity without increasing the number of slots.

5. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee.

Lee substantially teaches the limitations of parent claims 1-4.

Lee does not teach reception circuit with a receive signal amplitude control function by using the control value.

Official notice is taken that reception circuit with a receive signal amplitude control function by using a control value is well known and used to adjust and control the receiver attenuation/gain level in accordance with the receive signal amplitude.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add reception circuit with a receive signal amplitude control function to the system of Lee to improve the system signal reception, by appropriately adjusting the receive circuit to match the amplitude pre-emphasis on the transmit side.

6. Regarding claim 14, Lee substantially teaches the limitations of claim 14.

A communication unit for installation in a slot of a communication node having a plurality of slots (modules 13A-D on Fig. 1 of a memory device or any device comprising modules, where the signals between its modules depend on the modules location on the bus 6:34-47) comprising:

Art Unit: 2662

A transmission circuit (an output driver with programmable pre-emphasis located in modules 13A-D, as shown on Fig. 6 and 4:26-31) to transmit signals between a controller and communication units installed in plurality of slots (residing at different locations 3:7-23); and

A reception circuit for receiving a signal from a controller installed in another slot of said backplane transmission circuit (inherently part of the modules 13 A-D, because a reception circuit in the modules is essential for the system operation), and

A transmit side waveform control circuit controlling a waveform of a transmitted signal to said reception circuit (programmable slew rate and amplitude driver circuit on Fig. 6, comprising programmable pre-emphasis 4:26-31) on the basis of slot position information of the communication unit installed in other slots from the controller (interrogating the modules in populated slots 7:54-62 and measure a data signal delay to the populated slots to provide an appropriate waveform for the modules, inherently using installed slot position information in setting the appropriate waveform).

Lee does not teach communicating between the units installed in a plurality of slots, including the waveform control circuit on the receive side.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system of Lee in communicating between the units installed in a plurality of slots and control waveform on the receive side to improve the system flexibility, by adding data interchange between the modules and controlling unique modules waveforms (unique modules waveforms 7:44-53).

7. Regarding claim 15, Lee substantially teaches the limitations of claim 15.

Art Unit: 2662

A communication unit for installation in a slot of a communication node having a plurality of slots (modules 13A-D on Fig. 1 of a memory device or any device comprising modules, where the signals between its modules depend on the modules location on the bus 7:54-62) comprising:

A transmission circuit (an output driver with programmable pre-emphasis located in modules 13A-D, as shown on Fig. 6 and 4:26-31) to transmit signals between a controller and communication units installed in plurality of slots (residing at different locations 3:7-23); and

A signal waveform control unit (program register 51, lock circuit 53 and program delay 55 A-C on Fig. 8 and 6:3-14) for controlling the signal waveform (amplitude and slew of DATA OUT signal 5:17-65) on the basis of position information on the said communication unit installing slots in said backplane (interrogating the modules in populated slots 7:54-67 and 8:1-6 and measure a data signal delay to the populated slots to provide an appropriate waveform for the modules, inherently using installed slot position information in setting the appropriate waveform).

Lee does not teach communicating between the units installed in a plurality of slots, including the transmission/reception circuits for the communicating.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system of Lee in communicating between the units installed in a plurality of slots to improve the system flexibility, by adding data interchange between the modules.

Response to Arguments

8. Applicant's arguments, regarding the claim rejections under 35 USC 103(a), filed 11/29/05, have been fully considered but they are not persuasive.

Art Unit: 2662

On page 2 of the Response, Applicant argues that Lee does not teach using slot position information.

Examiner respectfully disagrees.

Lee teaches interrogating the modules in a populated slots of a bus system to determine which slots are populated and which are not 7:54-62, and measure a data signal delay to the populated slots to provide an appropriate waveform for the modules, inherently using installed slot position information in setting the appropriate waveform.

Lee's teaching regarding the transmission delay from the controller to the active slots is one of the methods of measuring Applicant's transmitting distance from a transmitter to the active slots, because the transmission delay is used by Lee to judge the distance between the transmitter and the receiver and set an appropriate transmit signal waveform to compensate the distance.

9. On pages 2 and 3 of the Response, Applicant argues that Lee teaches changing the waveform of data out signal depending only on the number of the modules installed.

Examiner respectfully disagrees.

Lee teaches changing the signal waveform depending on the individual positions of modules 13 a-d on Fig. 1 and 7:64-8:5. Applicant's arguments on the other conditions of the transmission delay are irrelevant, because Examiner did not base his rejection on these items (termination resistance, parasitic capacitance, etc.).

10. On pages 3 and 4 of the Response, Applicant argues that slot position information is different from the distance of Lee teachings.

Examiner respectfully disagrees.

Art Unit: 2662

Lee system comprises a circuit board with the module connectors, making slots for the installed modules, as shown on Fig. 1 and 1:12-24. Therefore, Lee measurement of the distance from the fixed positioned transmitter 11 to a module (one of 13a-d), identifies the module position/slot, as slot position information can be defined in many ways and the distance from a known position/slot is one of them.

Applicant's arguments regarding the populated slots located in the opposite directions from the transmitter are irrelevant, because this type of slots positioning was not directly claimed.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

Art Unit: 2662

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan
Patent Examiner.
1/5/06



JOHN PEZZLO
PRIMARY EXAMINER